## WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

November 21, 2011

| TO:   | Internal File   |  |  |  |
|---|---|--|--|--|
| THRU:   | Steve Christensen, Permit Supervisor 5kC  |  |  |  |
| FROM:   | Ken Hoffman, Environmental Scientist R  |  |  |  |
| RE:   | 2011 First Quarter Water Monitoring, PacifiCorp, Trail Mountain Mine, C/015/0009, Task ID #3763 |  |  |  |
| The Trail Mountain Mine is currently idle. The monitoring plan is described in Appendix A of Volume 9 of the MRP.   |   |  |  |  |
| 1. Were data submitted for all of the MRP required sites?   |   |  |  |  |
| The Oliphant portal discharge (18-1-1 or T-18) is monitored as a spring. The MRP identifies 18-3-1 (T-19) as a stream monitoring point but the Permittee reports it as a spring.  |   |  |  |  |
| In-mine   | YES 🖂 NO 🗌  |  |  |  |
| The mine is sealed, so there is no monitoring of underground or in-mine water.  |   |  |  |  |
| Springs   | YES 🖾 NO 🗌  |  |  |  |
| The Oliphant portal discharge (18-1-1 or T-18) is monitored quarterly. Mine discharge has not occurred since December of 2001. The Permittee monitors springs 17-35-2, 17-35-1, 17-26-5, 17-25-1, 17-26-4, 17-22-1, 17-21-1, and 18-2-1 for operational parameters in July and October and for flow only in August and September. Per the MRP springs were not monitored during 1 <sup>st</sup> Quarter 2011. |   |  |  |  |
| Streams   | YES NO  |  |  |  |
| The Permittee monitors SW-1, SW-2 and SW-3 in Cottonwood Canyon and 18-3-1 (T-19) in Straight Canyon, for flow only during the first two months of each quarter and for operational parameters during the last month of each quarter. No flow was observed at SW-1 and SW-3 during the 4 <sup>th</sup> Quarter 2010. SW-2 and 18-3-1 were the only locations where flow was observed during the quarter.      |   |  |  |  |

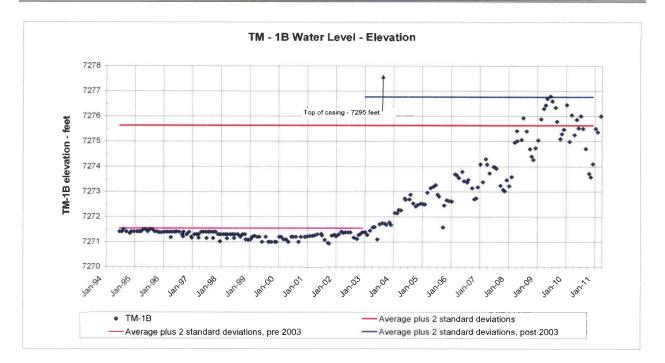
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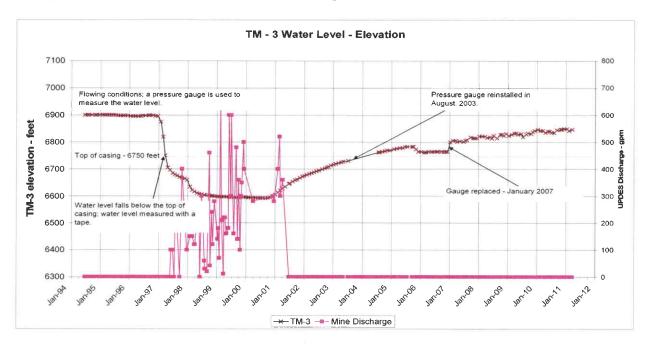
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|--|-----------------|---------------------|--|--|
| UPDES  | YES 🖂           | NO 🗌                |  |  |
| There was no reported discharge from either UPDES point during the First Quarter 2011 The mine was sealed in June 2001 and there has been no reported discharge at UPDES UT23728–002 (the mine-water discharge into Cottonwood Creek) since May 2001.  |                 |                     |  |  |
| Wells  | YES 🖂           | NO 🗌                |  |  |
| Since July 2004, the water level in TM-3 has been reported as head above the casing elevation, determined from pressure measured by a gauge on the sealed wellhead (see chart below). TM-1B is monitored for water level monthly and for operational parameters during the last month of each quarter. |                 |                     |  |  |
| 2. Were all required parameters reported for each site?  |                 |                     |  |  |
| Springs  | YES 🖂           | NO 🗌                |  |  |
| Streams  | YES 🖂           | NO 🗌                |  |  |
| UPDES  | YES 🖂           | NO 🗌                |  |  |
| Wells  | YES 🖂           | NO 🗌                |  |  |
| 3. Were any irregularities found in the data?  |                 |                     |  |  |
| Listed parameters were outside two standard deviations. not a parameter required by the MRP.   | An asterisk (*) | indicates this is   |  |  |
| Springs  | YES             | NO 🖂                |  |  |
| Streams  | YES 🔀           | NO 🗌                |  |  |
| SW-2 March: field electric conductivity;   |                 |                     |  |  |
| UPDES  | YES             | NO 🗵                |  |  |
| No discharge.  |                 |                     |  |  |
| Wells  | YES 🔀           | NO 🗌                |  |  |

The head in TM-1B began slowly rising in early 2003. The cause is not evident. Although highly variable from quarter to quarter, the water level now appears to be declining (the elevation was highest in June 2009). Depth was within two standard deviations (post 2003 standard deviation) of the mean during the First Quarter 2011.

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TM-3: water elevation peaked in June 2005, remained steady through October, dropped 18.5 ft in November and December 2005 and remained virtually unchanged during 2006. The pressure gauge was replaced in January 2007 and values jumped to approximately match the pre-2006 curve. During the first half of 2007, the curve was relatively flat, but it resumed climbing during the third quarter and has continued on an upward trend.



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4. On what date does the MRP require a five-year resampling of baseline water data.

The next renewal will be on 02/21/15. Baseline analyses were performed in 2001 and

|    | 06. Analyses for baseline parameters will be repeated every 5 years and have 11. | been begun for         |  |  |  |
|----|--|------------------------|--|--|--|
| 5. | Based on your review, what further actions, if any, do you recommend?            |                        |  |  |  |
|    | There is no further action recommended at this time.                             |                        |  |  |  |
| 6. | Does the Mine Operator need to submit more information to fulfill this quarter's |                        |  |  |  |
|    | monitoring requirements?  YES  | NO 🖂                   |  |  |  |
| 7. | Follow-up from last quarter, if necessary.                                       | NA 🖂                   |  |  |  |
| 8. | Did the Mine Operator respond adequately to queries about missing or i           | rregular data?<br>NA 🔀 |  |  |  |
|    | There were no missing or irregular data in the First Quarter 2011.               | 414 K Z                |  |  |  |

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